

Wiki, Blog, Forum and Nuclear News

Knowledge Objects in Nucleonica

Zsolt Soti

Knowledge Management

- The aim is to produce high quality information resources which are easily accessible.
- The electronic knowledge objects (EKO):
 - Scientific applications
 - Nuclear Data
 - Nucleonica Wiki
 - Blog, Forum
 - Nuclear News

Nucleonica Wiki

- Wikipedia like application
- Provides technical documentation
- Edited by Nucleonica experts and consultants



... web driven nuclear science

Applications Data Knowledge My Preferences Print Help New Browser

Nucleonica Network

Wiki

Ask an Expert

FAQ

Element Information

Karlsruhe Nuclide Chart

Glossary

Blog

Nuclear News

Forum

Conference Calendar

Tools

Forum

Conference Calendar

webGraph

Marketplace

Applications Portal

nuclear science

Coming soon

WESPA

Joint EC/IAEA Training course with Nucleonica announced

The next Nucleonica training course will be organised jointly with the JRC ITU and the IAEA. The course will take place from the 12-15th Oct. 2010 at the IAEA Marine Environment Laboratory (MEL) in Monaco.

März 19, 2010

Nucleonica Blog**Nuclear Co-operation between Jordan and Japan**

A nuclear cooperation agreement has been recently signed between Japan and Jordan, to build Jordan's first 1,000 MW reactor. Both Jordan and Japan are aiming at having the agreement ratified by early October, so that talks can progress between JAEC and Areva-Mitsubishi on the Atmea-1 reactor. Two others companies short-listed for the project are Atomic [...]

New half-life determination of selenium-79

Due to its long half-life, Se-79 is one of only a few nuclides that determine the long-term radiological impact of a repository on the environment. Over the years, a number of half-life determinations have been made. Results lie in the range 124 thousand years to 1.13 million years. This new measurement (1) of 327 thousand [...]

Conan the bacterium is back again!

In a recent paper (1), an explanation is postulated on how "Conan the Bacterium" can survive massive amounts of radiation which normally kills cells. The survival mechanism is based on protecting its proteins from oxidation – this saves the DNA repair enzymes from radiation damage. Background (2): The bacterium *Deinococcus radiodurans* or D. radiodurans, which means [...]

Nucleonica participation in ENETRAP Training Course

The Nucleonica team will participate in the European Radiation Protection Training Scheme (ERPTS) Pilot modules. The courses will be held in English as part of the activities of the EU Project ENETRAP II. The training course will take place at the Karlsruhe Institute of Technology (KIT) Center for Advanced Technological and Environmental Training. Further information [...]

45 new neutron rich isotopes identified

T. Ohnishi et al., have recently reported the identification of 45 new neutron-rich isotopes produced by the in-flight fission of a 238U beam at 345 MeV/nucleon. The experiments have been carried out at the RI Beam Factory at the RIKEN Nishina Center. Fission fragments were analyzed and identified by using the superconducting in-flight separator BigRIPS. The [...]

Welcome, Zsoit

[My Profile](#) [My Community](#) [My Settings](#)

> My Community Events

You have 0 new messages

You have 0 new contact list requests

> Recent Nucleonica Members

Frank Vanderlinden

Krasimira Pistuhina

Jivko Tenev

Lawrence Thorne

Nucleonica Forum**How is Mo99 produced?**

In nuclear medicine, the nuclide technetium-99m, Tc99m, is often mentioned in connection with in-vivo gamma irradiation. The parent nuclide of Tc99m...

Fission fragments versus fission products: what is the difference?

In Nucleonica, webkorigen computes the quantities of "fission products", while the "Fission Product" yields module displays and compares yields from...

Range & Stopping Power of fission product ions in materials

Can the Range & Stopping Power module be used to calculate the ranges of fission product ions in



Most of the entries under Help are links to the technical documentation

Windows Internet Explorer window titled "All articles - NucleonicaWiki". The address bar shows <http://www.nucleonica.net/wiki/index.php/Special:Allpages/Help>.

The page displays the "All articles" special page for the "Help" namespace. The left sidebar contains navigation links (Help, Glossary, Element Information, ReadingRoom, Gallery of Nuclear Science, Weblinks, Karlsruhe Nuclide Chart), support links (Nucleonica at a glance, Nucleonica Overview, Ask an Expert, FAQs, Technical Support), tools (Recent changes, Random page, Editing), search, and a toolbox (Upload file, Special pages).

The main content area lists various articles under the "Help" namespace, organized in three columns:

- Ask an Expert
- Conference Calendar
- Dosimetry & Shielding
- Exercises Committed Effective Dose Calculation
- FAQ
- Graphics File Formats
- How this Wiki is organized
- Installation and Setup
- Library Creation for 3rd party software
- Mobile Portal
- Nuclear Knowledge Management Strategy
- Nucleonica Database
- Nucleonica at a glance
- Nuclide mixtures
- Overview of Nucleonica
- Photo Gallery 9th Nucleonica Training Course
- Primordial Nuclides in Nucleonica
- Range & Stopping Power
- Scripting language documentation
- Transport & Packaging
- Wedge Model for Radiological Dispersion

- Averaged Cross Sections
- Contents
- EasyMonteCarlo
- Exercises Nucleonica Overview
- Fission Products and Yields
- Hosted Group Pages
- ITRAC-2 Photo Gallery
- Invitation to Join Nucleonica
- MCRD
- MyGroups
- Nuclear Media Monitor
- Nucleonica Events
- Nuclide Datasheets
- Nuclides.net
- Photo Gallery 10th Nucleonica Training Course
- Physical Constants
- Radiations
- Reference Notes
- Technical Support
- Universal Nuclide Chart

- Cambio File Converter
- Decay Engine
- Editing
- Extended Graphics Module
- Gamma Spectrum Generator
- Hot Topics
- Identify
- Karlsruhe Nuclide Chart
- Mass Activity Calculator
- Nuclear Data Retrieval
- Nucleonica@NESTet2008
- Nucleonica News Archive
- Nuclide Explorer
- Nuclides 2000
- Photo Gallery 1st Nucleonica ITCM
- Portal
- Radioactivity in a Suitcase
- Register as a Nucleonica User
- Training Course Announcements
- WebKORIGEN

The "Register as a Nucleonica User" and "Training Course Announcements" links are circled in red.

Footer links: Privacy policy, About NucleonicaWiki, Disclaimers. Powered By MediaWiki.

http://www.nucleonica.net/wiki/index.php/Help:Training_Course_Announcements

File Edit View Favorites Tools Help



Help: Training Course Announcements - NucleonicaWiki

Stay in touch with Nucleonica Networking (V. Kleinrath)

Testimonials

"Excellent training, prima organised. Many thanks to the organising committee." (Christian Wille)

"Excellent & super helpfull course. The best choice of speakers! The combinations of the exercises with the lectures was great." (Avi Sharon)

"This training course was really tutorial, informative and efficiently organized." (Matteo Rini)

"... And I hope Nucleonica will be like a key word for nuclear chemists and nuclear physics" (Zeynep Talip)

"Very usefull course, a lot of interesting presentations. I met here many experts and high qualification specialists" (Igor Maliuk)

"Very interesting lectures and exercises, I have learnt a lot! Thank you very much to all speakers!" (Michaela, Smcik)

"First of all I would like to thank all of the people who had put effort to this workshop and developing nucleonica. It was great to hear all those knowledgefull talks from specialist all around the world. Sharing ideas and connecting with colleagues from other institutions was an excellent experience. When I get back to Turkey I will share all my experience with my colleagues in Turkey..." (Tolga Inal)

"I found the course was very helpfull to learn how the nucleonica works and what it is capable of doing. The different seminars were positive. They linked the theory with real life, so that it was possible to get a filling of dangers and the security needed." (Marika Vespa)

"I deeply appreciated the wise combination of high quality lectures and exercises, as well as the efficient organization of the various activities." (Francesca Quinto)

"... Congratulations! great and modern platform, which deserves attention..." (Rolf Art)

"This course was very educational and usefull for my investigations" (Banu Özden)

April 2009 Karlsruhe

1st Advanced Training Course on Illicit Trafficking and Consequence Management with NUCLEONICA, Karlsruhe, April 22-24th, 2009.

The 1st Advanced Training Course on Illicit Trafficking and Consequence Management with NUCLEONICA took place at the Institute for Transuranium Elements, Karlsruhe, Germany from the 22-24th April 2009. In contrast to the previous, more general Nucleonica training courses, this was the first course devoted specifically to the use of Nucleonica within the fields of Illicit Trafficking and Consequence Management. The course was aimed at persons who provide technical support (measurements, interpreting results, drawing conclusions, making recommendations) for the actions in response to illicit trafficking incidents and radiological events. The participants included physicists, radio-chemists, health physicists, technical experts from national law enforcement agencies and regulatory authorities, who may be involved in the assessment of such events. In total, 24 participants from Turkey, Macedonia, Russia, Ukraine, Moldova, Azerbaijan, Germany and Austria took part. Invited speakers included R. Abedin-Zadeh (IAEA), H.-W. Wiese, Karlsruhe Institute of Technology, E. Kröger (Bundesamt für Strahlenschutz, BfS), P. Peerani, (IPSC, JRC Ispra), Mustafa Tufan (Ondokuz Mayıs University, Samsun).



ITRAC-1 Group photo April 2009, Institute for Transuranium Elements, Karlsruhe, Germany

[edit]

http://www.nucleonica.net/wiki/index.php/Image:khe48.jpg

Internet

100%

Other main pages:

All articles - NucleonicaWiki - Windows Internet Explorer

http://www.nucleonica.net/wiki/index.php/Special:Allpages/Help:

File Edit View Favorites Tools Help

All articles - NucleonicaWiki

Zsoti my talk preferences my watchlist my contributions log out

special page

nucleonica [wiki]

navigation

- Help
- Glossary
- Element Information
- ReadingRoom
- Gallery of Nuclear Science
- Weblinks
- Karlsruhe Nuclide Chart

support

- Nucleonica at a glance
- Nucleonica Overview
- Ask an Expert
- FAQs
- Technical Support

tools

- Recent changes
- Random page
- Editing

search

Go Search

toolbox

- Upload file
- Special pages

All articles

Display pages starting at: All pages

Namespace: Help Go

Ask an Expert	Averaged Cross Sections	Cambio File Converter
Conference Calendar	Contents	Decay Engine
Dosimetry & Shielding	EasyMonteCarlo	Editing
Exercises Committed Effective Dose Calculation	Exercises Nucleonica Overview	Extended Graphics Module
FAQ	Fission Products and Yields	Gamma Spectrum Generator
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Wedge Model for Radiological Dispersion		

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http://www.nucleonica.net/wiki/index.php/Help:Training_Course_Announcements

Internet 100%

Exercise 13 - The C-14 Dating

Carbon-14 is produced at almost a constant rate in the atmosphere by interaction of cosmic rays with nitrogen. Following production the carbon atoms are oxidised to form $^{14}\text{CO}_2$ which then follows the CO_2 cycle. Following the death of an organism, the CO_2 is terminated and the C-14 but decays. Since the initial activity is known and the present value of C-14 in the organism can be measured, the age can be determined. If the steady state ratio of C-14/C-12 in some live organism is $2\text{e-}12$ and in a sample from a mummy is measured a concentration of $1.2\text{e-}12$, how old is the mummy?

Solution:

- The question is how much time is necessary that due to decay from 2 unit of C-14 remain 1.2 unit of C-14.
- Open the Decay Engine. Menu: Applications; Decay Engine.
- Select: Element: C; Mass: 14
- Take 2g, leave the time as default (it is 10 time the half-life of nuclide)
- Press the button Start. It shows that the end of this period it remains only 0.002g of C-14.
- Define the period to one time the half-life of C-14: 5.7e3 years. It remains than about 1g of C-14
- Take a period of 4000 years 4e3, press Start: than remains 1.23g...take 4200 years as a solution.

Dosimetry and Shielding

Exercise 14 - Calculate the dose rate

Calculate the approximate dose rate at the distance of 2m from 240MBq C-60 source.

The screenshot shows the 'Decay Engine' application window. The 'Current Chart' is set to 'Nucleonica - Decay Engine'. The 'Element' is 'C' and 'Mass' is '14'. The 'Quantity' is 'Grams' and 'Time' is 'Years'. The 'Accuracy Factor' is '1E-02' and 'Number of time steps' is '10'. The 'Number of chains' is '1'. The 'Start' button is highlighted. The 'Decay Engine' table shows the following data:

Parent Nuclides	Half-life	Decay	Daughter	Mass	Activity
8 C14	5.7E3 y	β ⁻	8 N14	1.20E+00	1.98E+11
7 N14 Stable	Stable		7 N14	3.44E+22	7.19E+01
Total			8 O16	2	1.98E+11

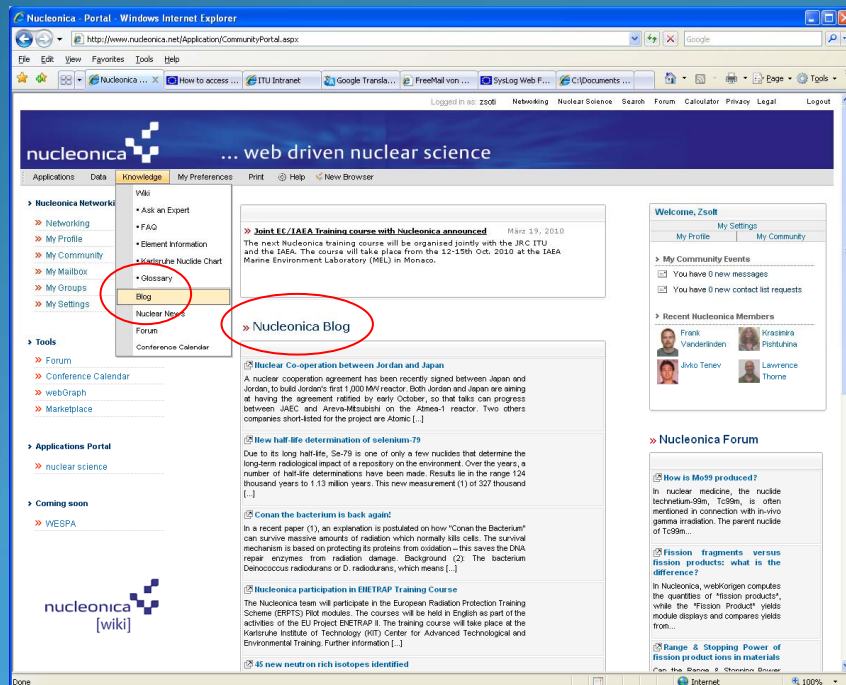
The 'Download' button is set to 'Excel' and 'Separator' is 'Comma (,)' with 'Use field qualifier' checked. The 'Type of graph' is 'Numbers'. The graph shows the decay of C-14 over time, with the y-axis labeled 'ln(N/N0)' and the x-axis labeled 'Time (years)'. The graph shows a linear decrease from 0 to -10 over 10,000 years.

C-14 dating with Decay Engine

[edit]

Nucleonica Blog

- Provides latest information on Nucleonica portal and related products such as Karlsruhe Nuclide Chart
- There are two main categories:
 - The Karlsruhe Nuclide Chart
 - Nucleonica



Nuclear Co-operation between Jordan and Japan

S e p t e m b e r 1 4 t h , 2 0 1 0

by Joseph Magill

A nuclear cooperation agreement has been recently signed between Japan and Jordan, to build Jordan's first 1,000 MW reactor. Both Jordan and Japan are aiming at having the agreement ratified by early October, so that talks can progress between JAEC and Areva-Mitsubishi on the Atmea-1 reactor.

Two others companies short-listed for the project are Atomic Energy of Canada, with its Enhanced Candu-6, and Russia's Atomstroyexport, with its VVER-1000

Bookmark with:

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New half-life determination of selenium-79

S e p t e m b e r 9 t h , 2 0 1 0

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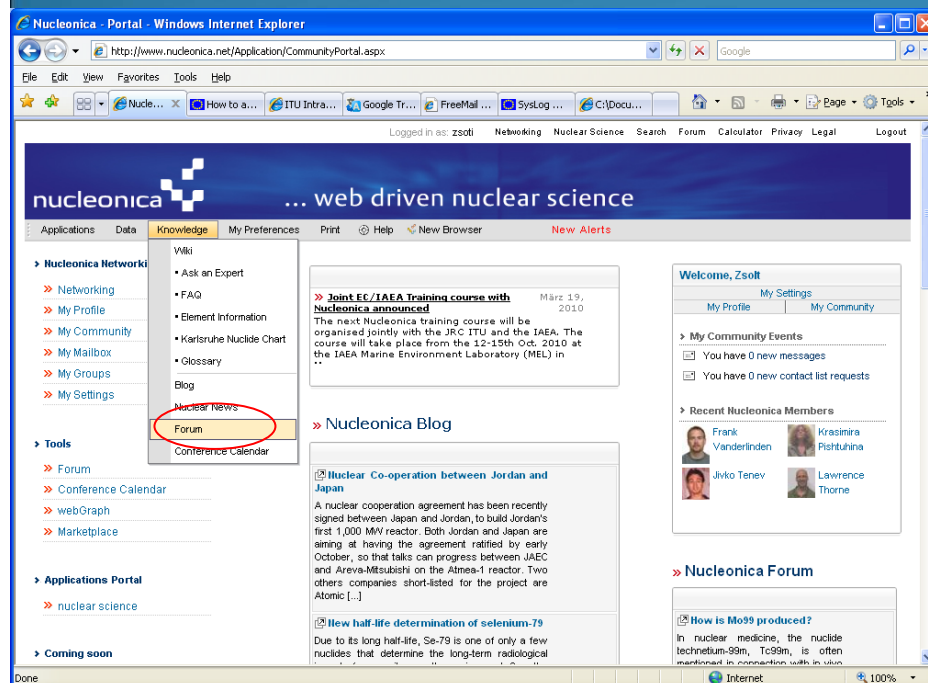
October 6,

2010

The leadership of the IAEF has admitted

Nucleonica Forum

- Question and answer interaction between the experts
- Scientist can assist each others on a reciprocal basis
- New knowledge can be created through the dialogue and discussion





... web driven nuclear science



Forum

If this is your first visit, be sure to check out the [FAQ](#) by clicking the link above. You may have to register before you can post: click the register link above to proceed. To start viewing messages, select the forum that you want to visit from the selection below.

Nucleonica forums

Welcome to the Nucleonica forums.

Nucleonica Portal



General (1 viewing)
General comments

Last Post

Threads: 85
Posts: 160
What does "rel.eff. xx.x%" ...
by **abertizov**
27-09-10, 17:09

Mark Forums Read | View Forum Leaders

What's Going On?



Currently Active Users

There are currently 2 users online. 0 members and 2 guests
Most users ever online was 44, 04-06-10 at 22:42.



Nucleonica forums Statistics

Threads 85 Posts 160 Members 215 Active Members 19
Welcome to our newest member, kaptyler



Icon Legend

- Contains unread forum posts
- Contains no unread forum posts
- Forum is a category
- Forum is a Link

Main Forum

Hello Mike, here are the answers to your questions: 1) In every simulation run the GSG (in addition to a user's task) calculates the Full Energy Peak (FEP) efficiency for a monoenergetic 1.33...

What does "rel.eff. xx.x%" really...
27-09-10 17:09

I have the same problem. the GSG overestimated the relative efficiency of Ge detector. Also, I have observed that generated spectra for Co-60, Ba-133 and Na-22 are higher than the actual...

What does "rel.eff. xx.x%" really...
24-09-10 20:08

Lets start by assuming Mo99 is produced directly as one of the two fission products. Typically the number of neutrons produced in the fission process is small, either 2 or 3. Let's assume 3, then, in...

How is Mo99 produced?
10-09-10 13:30

In nuclear medicine, the nuclide technetium-99m, Tc99m, is often mentioned in connection with in-vivo gamma irradiation. The parent

General - Windows Internet Explorer

http://www.nucleonica.net/forum/forumdisplay.php?3-General

File Edit View Favorites Tools Help

General

+ Post New Thread

Forum: General
General comments

Threads 1 to 20 of 85

Page 1 of 5 1 2 3 ... Last

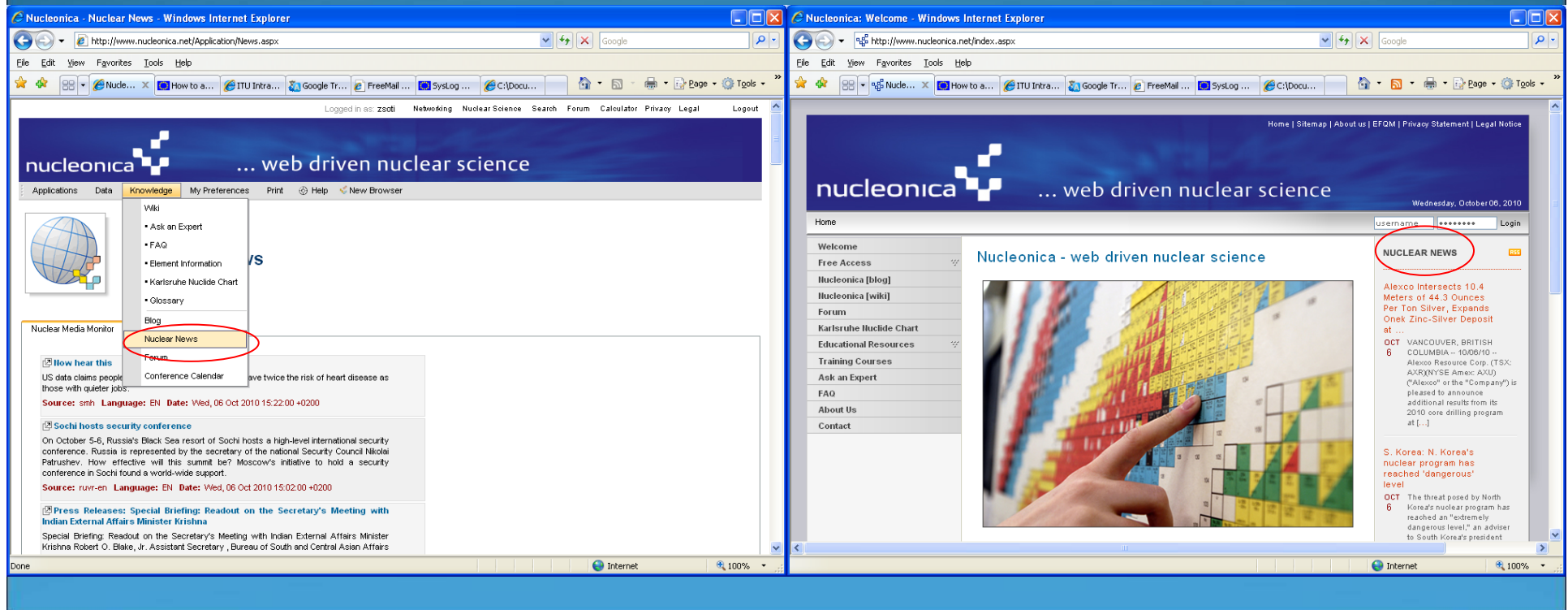
Forum Tools Search Forum

Title / Thread Starter	Replies / Views	Last Post By
 What does "rel.eff. xx.x%" really mean for a HPGe configuration? Mikhail Morev	Replies: 2 Views: 185	abarlizov 27-09-10 17:09
 How is Mo99 produced? Berkuc	Replies: 1 Views: 200	HotCells 10-09-10 13:30
 Fission fragments versus fission products: what is the difference? XRay	Replies: 1 Views: 220	HotCells 09-08-10 10:43
 Nucleonica Events codeless	Replies: 2 Views: 311	HotCells 02-08-10 10:42
 Range & Stopping Power of fission product ions in materials XRay	Replies: 1 Views: 306	jmagill 02-08-10 09:17
 What is the definition kinf and how is it calculated? NUWS	Replies: 0 Views: 152	NUWS 29-07-10 10:32
 Why do electrons and positrons not have the same stopping power? XRay	Replies: 1 Views: 181	HotCells 29-07-10 09:20
 webKORIGEN: Single Group Cross Section? HotCells	Replies: 1 Views: 177	hwiese 22-07-10 08:43
 webKORIGEN: Mass changes KarenRei	Replies: 4 Views: 364	hwiese 14-07-10 10:14
 webKORIGEN: Desired feature: neutron energies KarenRei	Replies: 4 Views: 372	hwiese 05-07-10 11:09
 webKORIGEN: Desired feature: radiation flux details KarenRei	Replies: 2 Views: 285	KarenRei 02-07-10 22:01
 webKORIGEN: Possible Bug: Mass is irrelevant KarenRei	Replies: 1 Views: 166	KarenRei 29-06-10 17:54

Internet 100%

Nuclear News

- It is an aggregation service that provides latest news on nuclear issues
- A web-crawler scans thousands of newspapers worldwide on an hourly basis



Exercise - EKO

1. Who and when identified the element Einsteinium?
2. Find some information about the Monte Carlo method in Nucleonica.
3. Why do electrons and positrons not have the same stopping power?

Exercise - EKO

1. Nucleonica Wiki – Element information
2. Nucleonica Wiki - Glossary
3. A post in the Forum

Thank you!

